

## IN THE CLAIMS

Claims 1-9 (Canceled).

10 (Currently Amended). A packaged integrated system comprising:  
an integrated circuit;  
an integrated electroosmotic pump mounted on said integrated circuit;  
a catalytic re-combiner; ~~and~~  
a package including said circuit, said pump, and said re-combiner; and  
said integrated circuit is part of a first die and said integrated electroosmotic pump  
is part of a second die, said second die having a first side and a second side, said pump formed  
on said first side.

Claim 11 (Canceled).

12 (Currently Amended). The system of claim [[11]] 10, including microchannels to  
circulate cooling fluid on said second side and said second side mounted on said first die.

13 (Currently Amended). The system of claim [[11]] 10, including stacking said  
second die on said first die.

14 (Previously Presented). The system of claim 13, including a third die, said third die  
including a re-combiner, said third die stacked on said first and second dice.

15 (Previously Presented). The system of claim 14, including a heat exchanger stacked  
on said re-combiner.

16 (Previously Presented). The system of claim 14, wherein said first die is coupled to  
said second die using copper-to-copper bonding.

17 (Previously Presented). The system of claim 10, wherein said package is a flip-chip package.

18 (Previously Presented). The system of claim 10, wherein said package is a bumpless build-up layer package.

19 (Currently Amended). A packaged integrated circuit comprising:  
an integrated circuit;  
an integrated electroosmotic pump;  
a catalytic re-combiner; ~~and~~  
a bumpless build-up layer package including said circuit, said pump, and said re-combiner, said package including a build-up layer that mechanically couples said circuit, said pump, and said re-combiner; and  
said integrated electroosmotic pump is formed on a first die, said integrated circuit is formed on a second die and said re-combiner is formed on a third die.

Claim 20 (Canceled).

21 (Currently Amended). The system of claim ~~[[20]]~~ 19, wherein said integrated circuit die is mounted under said integrated electroosmotic pump die.

22 (Previously Presented). The system of claim 21, wherein said first and second dice are coupled by copper-to-copper bonding.

23 (Previously Presented). The system of claim 19, including a heat spreader coupled to said build-up layer.

24 (Currently Amended). The system of claim ~~[[20]]~~ 19, wherein said first die includes at least one electroosmotic pump on one side and a plurality of microchannels on the other side, said microchannels to circulate cooling fluid pumped by said electroosmotic pump.

25 (Previously Presented). The system of claim 24, wherein said first die is mounted on said second die with said microchannels facing said second die.